

*Columbia-Presbyterian
Medical Center
Annual Report 1990*



Series
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1995
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Columbia-Presbyterian Medical Center

Columbia-Presbyterian Medical Center is one of the world's foremost centers for patient care, biomedical research, and health sciences education.

The Medical Center, the nation's first, was created in 1922, the result of an alliance between The Presbyterian Hospital and Columbia University's College of Physicians & Surgeons. Throughout more than six decades, Columbia-Presbyterian Medical Center has produced important medical advances in the course of fulfilling its threefold mission of delivering the highest quality health care to the sick and injured; teaching new generations of health care providers and research scientists; and pioneering innovative medical research.

An overview of the Columbia-Presbyterian Medical Center of the 1990s encompasses a new tertiary-care hospital building and a modern community hospital, busy clinics and satellite doctors' offices, basic research laboratories focusing on genetics, biophysics, structural biology, neurobiology and other leading-edge subjects, and premier schools of medicine, nursing, public health, dental and oral surgery, as well as programs in occupational and physical therapy. Together, they constitute one of the world's great medical centers.



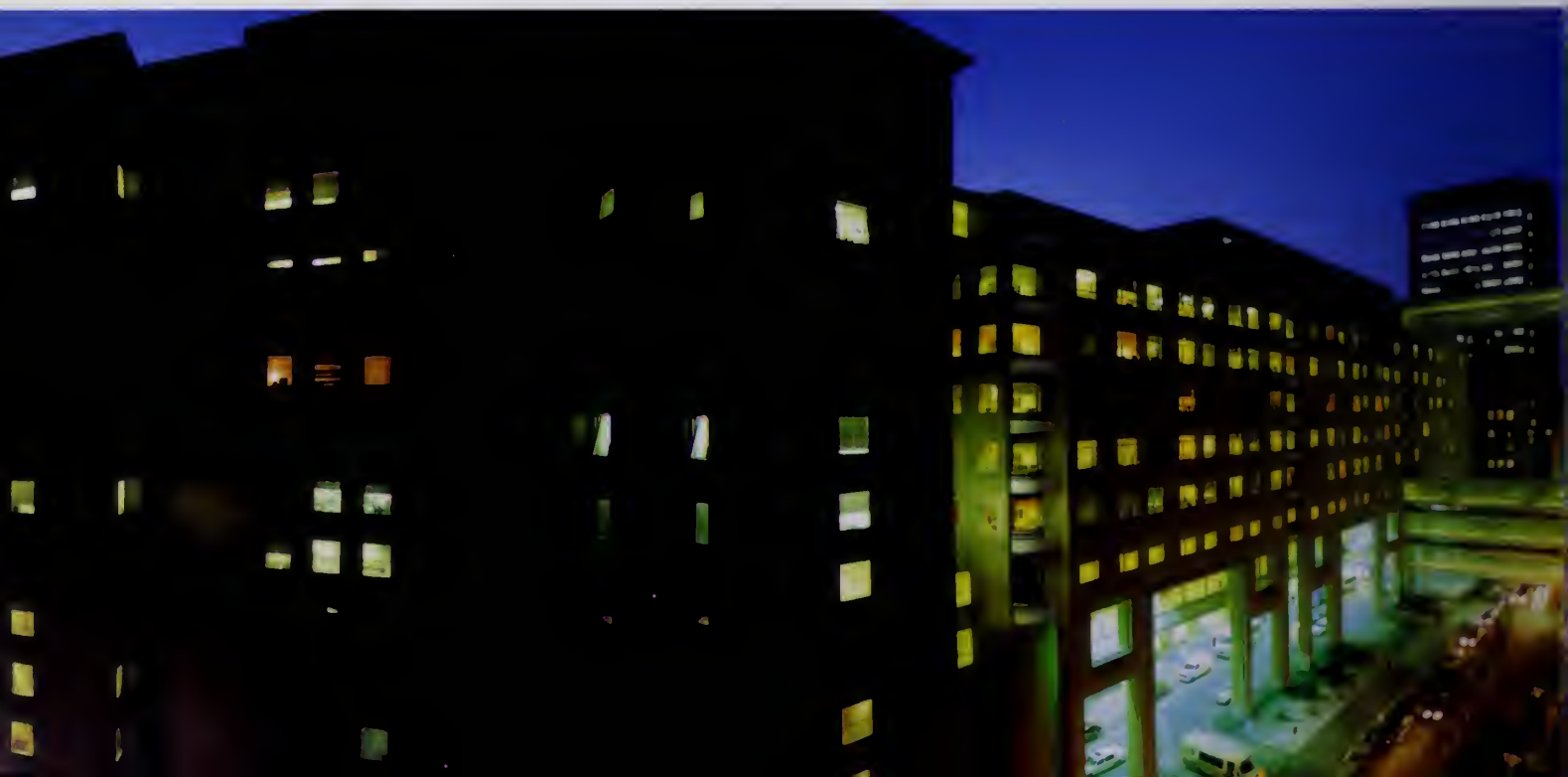
The Presbyterian Hospital in the City of New York

The Presbyterian Hospital was founded as a general hospital by James Lenox in 1868, and was dedicated to “the Poor of New York without Regard to Race, Creed, or Color.”

In 1911, the Hospital entered into an agreement with the Columbia University College of Physicians & Surgeons to coordinate patient care with the College’s education and research programs. That alliance led to the formation of the Columbia-Presbyterian Medical Center at its present location in the Washington Heights/Inwood area of northern Manhattan.

The 1930s and 1940s were a time of expansion for The Presbyterian Hospital, when a number of prestigious health care institutions became affiliated with it and the modern hospital took shape. Joining Presbyterian were the Neurological Institute of New York, New York Orthopaedic Hospital, Sloane Hospital for Women, Babies Hospital, Edward S. Harkness Eye Institute, and the J. Bentley Squier Urological Clinic. Columbia University’s Vanderbilt Clinic also became part of the new Medical Center complex.

In 1985, the Hospital began a \$500 million modernization program. As part of that program, the Hospital opened the 300-bed Allen Pavilion, a community hospital located at the northern tip of Manhattan, in 1988. The centerpiece of the modernization program is the 10-story, 745-bed Milstein Hospital Building, opened in 1989. Today, The Presbyterian Hospital is the largest in New York City and the third largest in the United States.





Components of The Presbyterian Hospital

Babies Hospital. Babies Hospital, founded in 1887, has a distinguished history in the treatment of infants and children. The facility now provides the most advanced treatment in every pediatric specialty. Staff members take pride in delivering family-centered care and work closely with family members to ensure the child's comfort. Babies Hospital is known for its outstanding neonatal intensive care unit and cardiac care program for newborns and young children. The first successful pediatric heart transplant was performed here.

The Neurological Institute. Founded in 1909 by a small group of doctors treating nervous disorders, the Neurological Institute soon built a reputation for outstanding health care and training of physicians and nurses.

Through the years, the Neurological Institute became well known for treatment of Parkinson's disease and movement disorders. Patients are referred to the Neurological Institute's stroke center from throughout the world. The Institute's neurological surgery department has pioneered significant advances in the treatment of aneurysms and brain tumors.

The Edward S. Harkness Eye Institute. Opened in 1933 and named for the founder of the Medical Center, the Eye Institute is an eminent center for research in ophthalmology and treatment of all eye disorders, including cataracts, tumors of the eye, and glaucoma. The first





clinical use of lasers occurred here, and it has been a pioneer in development and applications of different kinds of lasers, including the ruby, carbon dioxide, tunable organic dye, and excimer lasers. The Eye Institute has been a leader in the development and use of ultrasound for diagnosing and treating eye disorders. The first use of the high resolution CT scan for diagnosing eye diseases occurred here.

Vanderbilt Clinic. The Presbyterian Hospital's outpatient clinics, known collectively as Vanderbilt Clinic, are among the best in the world. Originally presented by the Vanderbilt family to Columbia University in 1888, Vanderbilt Clinic became part of The Presbyterian Hospital in 1928. Serving a diverse population from the Hospital's immediate neighborhood, Vanderbilt Clinic provides outstanding care for patients in every medical and surgical discipline, as well as excellent training for medical students and residents. Through the Vanderbilt Clinic, the Hospital provides outstanding health care to people who are uninsured as well as those who do not have primary physicians. It is active in promoting an awareness of disease prevention and health issues among community residents. The Vanderbilt Clinic is part of Presbyterian's community-based Ambulatory Care Network Corporation.

The New York Orthopaedic Hospital. The New York Orthopaedic Hospital was founded in 1866, largely because of the interest of Theodore Roosevelt (father of the first President Roosevelt) in the care of crippled people. It became consolidated with Presbyterian in 1945 and



moved to the Medical Center in 1950. The first spinal fusion procedure for the treatment of scoliosis was performed here, and New York Orthopaedic Hospital developed the first artificial joints for hips, shoulders, and knees.

Sloane Hospital for Women. Founded in 1886 as one of the first hospitals dedicated to women's health, Sloane Hospital for Women is best known for care of women considered at risk for difficult pregnancies, and for research and treatment of ovarian and breast cancer. Among its treatment and research landmarks are development of a life-saving technique to prevent Rh disease that is now used all over the world; the first amniocentesis; and the first in-utero surgical procedure.

Sloane Hospital's in-vitro fertilization program is among the most successful in New York, and the city's first in-vitro birth took place here. Sloane Hospital for Women is creating a modern birthing center for normal pregnancies, to complement its outstanding facilities for high-risk pregnancies.

Health Care Facilities of The Presbyterian Hospital

The Presbyterian Hospital delivers both inpatient and outpatient care at a number of facilities. Inpatient care facilities are:

The Milstein Hospital Building. Presbyterian's 745-bed, technologically advanced primary inpatient hospital opened in 1989. Most acute-care adult patients admitted to The Presbyterian Hospital are cared for here. The Milstein Hospital Building houses surgical suites, intensive





care units, imaging suites, and the distinguished McKean Pavilion, which offers patients an array of amenities and services.

The Allen Pavilion. The Presbyterian Hospital's 300-bed community hospital, located at 220th Street and Broadway at the northern tip of Manhattan, includes services in anesthesiology, dermatology, medicine, medicine-emergency, obstetrics/gynecology, orthopedics, psychiatry, surgery, and urology. There are four operating rooms, a coronary care unit, occupational and physical therapy services, and an active emergency room. Allen Pavilion physicians are affiliated with the Hospital and faculty members of Columbia University's College of Physicians & Surgeons. The Allen Pavilion brings outstanding and critically needed health care to northern Manhattan.

Babies Hospital/Sloane Hospital for Women. All children are cared for at Babies Hospital. Located in the same building is Sloane Hospital for Women, for obstetrics patients.

The Presbyterian Hospital delivers outpatient care at several locations throughout the metropolitan area, including: ***The Atchley Pavilion***, at Columbia-Presbyterian Medical Center; ***Columbia-Presbyterian-Eastside Associates***, on the Upper East Side; and ***Columbia-Presbyterian/Riverdale Associates***, at The Century in Riverdale. There are additional practices in Riverdale, Manhattan, Rockland County, and Bergen County in New Jersey.

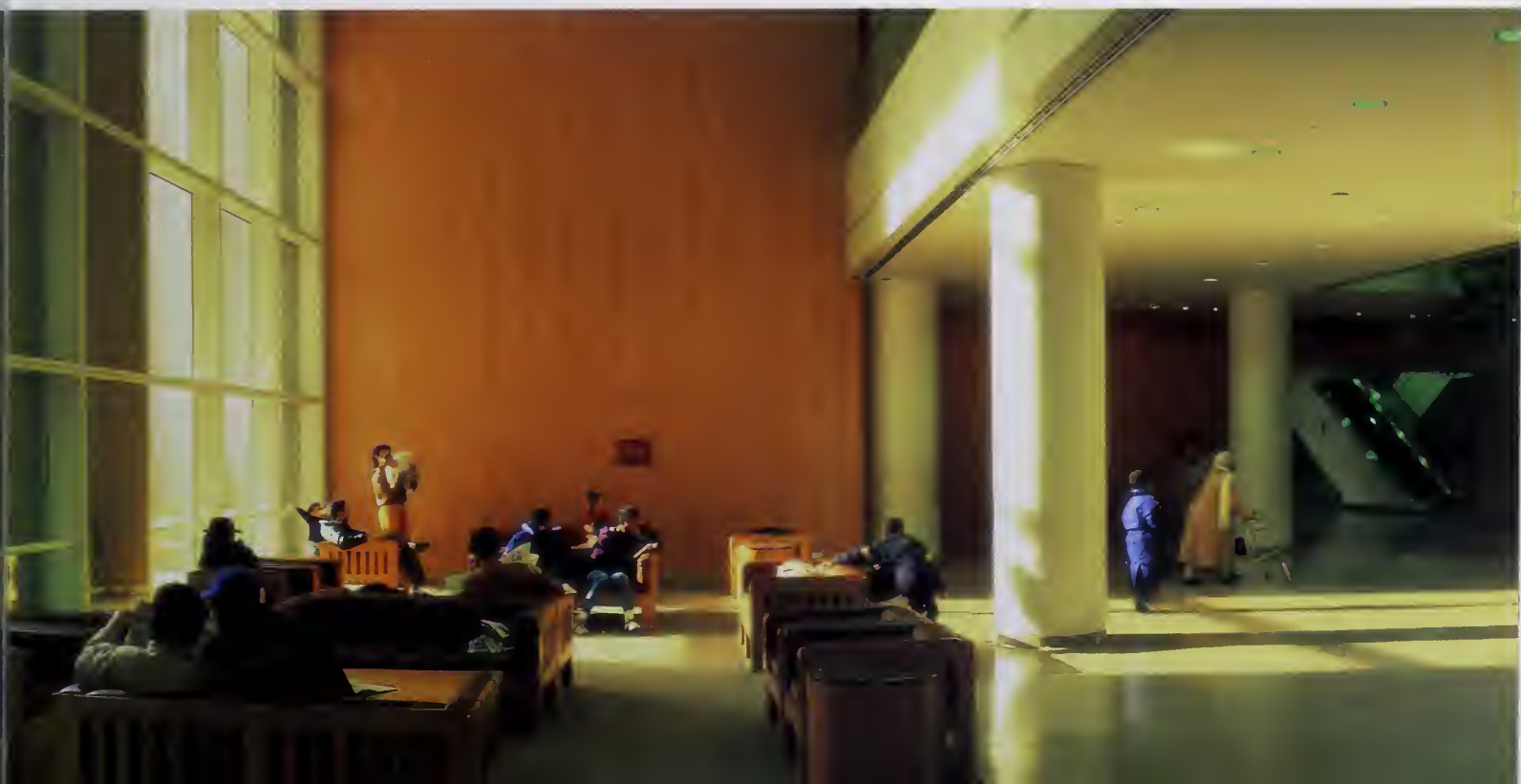


One innovative community health project operated by The Presbyterian Hospital is the *Ambulatory Care Network Corporation*. The ACNC oversees outpatient care at the Vanderbilt Clinic and also operates several primary care physician practices conveniently located throughout the Washington Heights/Inwood community. These offices offer walk-in care as well as regular appointments. All ACNC physicians are affiliated with The Allen Pavilion and The Presbyterian Hospital, ensuring community residents who use them the best possible health care. The ACNC, together with The Presbyterian Hospital and The Allen Pavilion, has stepped in to fill a gap in health care left by the closing of five major hospitals in Washington Heights/Inwood over the past twenty years. These services have become a model of community-based health care.



The Presbyterian Hospital: Statistics

Outpatient visits in 1990:	316,234
Inpatient admissions, 1990:	44,993
Total number of beds, all inpatient sites:	1,419
Bassinets:	69
Physicians and dentists:	1,600
Residents:	582
Visiting fellows:	73
Annual operating budget:	\$451,378,000
Number of employees:	8,332
Annual labor costs:	\$359,000,000



Columbia University Health Sciences

The Health Sciences Division of Columbia University includes the College of Physicians & Surgeons, the Schools of Nursing, Public Health, and Dental and Oral Surgery, and allied health programs.

The College of Physicians & Surgeons

Columbia University began as King's College, which was founded in 1754 by Royal Grant of George II, King of England, "for the Instruction of Youth in the Learned Languages, and the Liberal Arts and Sciences." The American Revolution interrupted its program, but in 1784 it was reopened as Columbia College. In 1912, the title was changed to Columbia University in the City of New York.

King's College organized a medical faculty in 1767 and was the first institution in the North American Colonies to confer the degree of Doctor of Medicine. In 1814, the medical faculty of Columbia College was merged with the College of Physicians & Surgeons (P&S), which had obtained an independent charter in 1807. In 1860, the College of Physicians & Surgeons became the medical department of Columbia College. The connection was only a nominal one, however, until 1891, when the college was incorporated as an integral part of the University.





Today, P&S occupies a 17-story building on the Medical Center campus. Each floor connects with the services of The Presbyterian Hospital. Adjacent to P&S, the William Black Medical Research Building, a 20-story facility, contains basic and clinical science laboratories for faculty members. The Julius and Armand Hammer Health Sciences Center, which opened in 1976, includes teaching, library, and research facilities. In conjunction with the City and State of New York, Columbia plans to build New York City's first biotechnology research facility—the Audubon Research Park—which will include university and privately owned research laboratories. About 600 medical students attend the College of Physicians & Surgeons, which has a total faculty of 2,010 full- and part-time instructors. Through its network of clinical affiliates, more than 1,000 house staff officers currently are in P&S-affiliated post-graduate training programs, including 400 at The Presbyterian Hospital.

In addition to 18 clinical departments, which correspond to the Hospital's 18 clinical services, there are seven basic science departments: Anatomy and Cell Biology, Biochemistry and Molecular Biophysics, Genetics and Development, Microbiology, Pathology, Pharmacology, and Physiology and Cellular Biophysics.





P&S is guided by the principle that medical education is university education; the acquisition of knowledge and skills is important, but far more vital is an understanding of the science, the art, and the ethic within which the knowledge and skills are applied. P&S counts among its alumni many leaders in academic medicine, research, and clinical practice.

School of Nursing

Looking forward to celebrating its centennial, the School of Nursing, a leader in nursing education, offers programs at the bachelor's and master's degree levels. The graduate program provides specialist training in 12 clinical majors. The School's emphasis on professional clinical practice prepares students to be skilled practitioners with a strong social awareness, while research and administrative components in the curriculum are designed to produce future leaders in academic nursing. The School has an enrollment of approximately 350 students.

School of Public Health

The School of Public Health, the only institution of its kind accredited in the metropolitan area, is an integral part of the Faculty of Medicine of Columbia University. The School, which has about 500 students, provides graduate instruction and research opportunities in preventive and administrative medicine, biostatistics,



population and family health, tropical medicine, epidemiology, environmental and sociomedical sciences, and in community organization for health services of all types. Joint degree programs are offered with eight other units of Columbia University.

School of Dental & Oral Surgery

One of the first dental schools in the nation to become fully integrated with a research university, the school now offers undergraduate education in dentistry and dental hygiene, as well as post-graduate courses in dentistry and a master's degree in dental hygiene. Joint degree programs are offered in combination with a variety of fields, such as public health, nutrition, and maxillofacial surgery. The School conducts clinics, which are open to the public, in all areas of dentistry, and it operates the Hospital's dental service.

Occupational Therapy Program

Training reflects the Occupational Therapy Program's philosophy that purposeful activity influences development, that activity can prevent and mediate dysfunction and foster adaptation, and that all human life involves a process of continuing adaptation through mastery of life skills. Graduates learn to help patients with daily living skills, develop play skills, and use leisure time productively. The program includes classes in designing, fabricating, and applying selected splints and using exercise to improve movement and limb functioning.



Physical Therapy Program

This two-year graduate program has recently been expanded to help ease the shortage of qualified physical therapists. Graduates take an active part in helping patients attain the highest possible level of physical, mental, social, and occupational independence.

Specialized Centers and Institutes

Comprehensive Cancer Center. The Comprehensive Cancer Center conducts basic science and clinical research in all areas of carcinogenesis. It also provides education throughout the community and within the University on cancer control, diagnosis, and prevention. The Center, which opened in 1975, is one of only two such centers in New York City established by the National Cancer Institute.

Center for Geriatrics and Gerontology. The Center for Geriatrics & Gerontology develops education, research, and clinical care programs in the field of aging. Depression and dementia among the elderly are of particular interest. The Center, which was established in 1980, emphasizes close cooperation among The Presbyterian Hospital's clinical services, the Schools of Public Health and Nursing, the College of Physicians & Surgeons, and resources for aging within the neighboring community.

Center for Neurobiology & Behavior. Established in 1975, the Center for Neurobiology and Behavior promotes research in neurobiology





and teaches neuroscience to students in the College of Physicians & Surgeons and the School of Dental & Oral Surgery.

Center for the Study of Society & Medicine. The Center for the Study of Society & Medicine, which opened in 1982, conducts research into a wide range of areas that affect the health professions. It also works to enrich the teaching and practice of medicine with conceptual and policy insights from the social sciences and humanities.

Comprehensive Sickle Cell Center. The Comprehensive Sickle Cell Center, in operation since 1983, provides specialized care, education and research activities in sickle cell disease. The Center periodically runs genetic counseling, continuing education, and screening programs for the local community.

Irving Center for Clinical Research. The Herbert and Florence Irving Center for Clinical Research furnishes resources for stimulating multidisciplinary, intensive investigation of human disease. It provides unique and substantial opportunities for undergraduate and postgraduate training in clinical investigation.

Gertrude H. Sergievsky Center. The Sergievsky Center, which opened in 1978, conducts studies related to determinants of seizure disorders; the prevalence, antecedents, and consequences of neurodevelopmental disabilities and handicaps, and the origin of congenital defects.





In addition, Sergievsky Center faculty teach at the School of Public Health, the College of Physicians & Surgeons, and Barnard College. The faculty also works to disseminate information to professional organizations, colleges, universities, and communities around the world.

Hughes Medical Institute Program in Molecular Neurobiology. The Hughes Institute Program at the Columbia-Presbyterian Medical Center, in operation since 1984, fosters research and education in molecular neurobiology. It is the only one of ten Hughes Medical Institute Programs in the country devoted to the neurosciences.

Howard Hughes Medical Institute Program in Structural Biology. Begun in 1986, the program is part of a larger effort by the Institute, which houses several of its research laboratories in various medical centers. This program, which focuses on biophysical studies of molecular structure, is centered in three areas: direct research activities in diffraction studies of macromolecular structure and function, core facilities for molecular biophysics, and a synchrotron radiation resource at Brookhaven National Laboratory.

International Institute for the Study of Human Reproduction. The Institute, which began in 1965, fosters basic research related to solving the world population problem, provides clinical and social services in the community related to the reproductive health of men and women, and conducts research and education in reproductive science



and health. The Institute incorporates two major centers: the Center for Reproductive Sciences and the Center for Population and Family Health. Its International Research and Technical Assistance Unit works with many foreign governments and private organizations toward improved basic health and family planning services for poor people in developing countries. As a division of the School of Public Health, the Center provides academic programs leading to master's and doctoral degrees in population/family planning, maternal and child health, and public health nutrition.

Institute for Cancer Research. Established in 1911, the Institute for Cancer Research conducts basic scientific research in carcinogenesis, biochemistry and molecular biology.

Institute of Human Nutrition. The Institute of Human Nutrition, which was established in 1958, studies human nutrition within three main areas: growth and development, nutritional diseases, and community nutrition. It also participates in the teaching of human nutrition and publishes *Nutrition and Health*, a newsletter for the general public, in conjunction with the School of Public Health.


Center for Psychoanalytic Training & Research. A course of training in the theory and practice of psychoanalytic medicine is offered through the Center and the Department of Psychiatry. The program, a minimum of four years in length, leads to the award of a certificate in Psychoanalysis.



Augustus C. Long Health Sciences Library. Located in the Julius and Armand Hammer Health Sciences Center, the library has nearly 450,000 volumes and a staff of 50. It is one of the largest medical center libraries in the nation. More than 4,000 periodicals are received regularly. The library includes a comprehensive media center equipped with audio-visual materials and equipment, as well as a significant rare book and special collections section. In addition to traditional reference services, the library offers a wide range of information services. Columbia-Presbyterian Medical Center, together with the Health Sciences Library, is one of four pilot institutions in the nation selected to plan for the development of an Integrated Academic Information Management System.

New York Psychiatric Institute. The Institute, the oldest for psychiatric research in the United States, is maintained by the New York State Office of Mental Health. It is a renowned center of research, education for mental health professionals, and treatment of patients. The Institute houses 16 major research laboratories, a hospital, and a wide range of specialized outpatient departments that provide diagnostic and treatment programs. The Lawrence C. Kolb Research Annex, a 13-story facility dedicated to psychiatric research, was opened in 1982.





Research, Clinical, Teaching Activities

The modern academic medical center is composed of seemingly discrete components—departments, centers, institutes, laboratories, schools—each charged with specific tasks and responsibilities. Closer examination, however, reveals that the components are intricately connected and interdependent, much like the organs of a human body. Progress in health care—against such multifaceted ailments as heart disease, cancer, AIDS, movement disorders, hereditary disease, and psychiatric illness—stems mainly from cross-fertilization, from the joint efforts of highly specialized physicians, researchers, nurses, administrators, and countless others.

Matters of the heart

Heart disease, the nation's foremost health problem, was addressed by specialists throughout the Medical Center. In the expanded Nuclear Cardiology Laboratory, now the area's largest, physicians evaluated several new imaging agents, including Indium-111-labeled antibodies, which are used to assess

heart muscle damage after myocardial infarction (MI).

Cardiologists also participated in a multicenter study of physiologic signals, such as arrhythmias, that may predict the risk of death after heart attack. The same group began testing the prophylactic use of implantable cardioverter defibrillators to improve survival among high-risk bypass surgery patients.

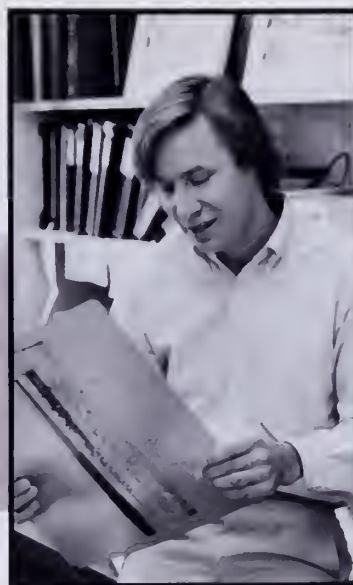
Columbia-Presbyterian's transplant surgeons were busier than ever, performing a record number of cardiac transplants (108) as well as several heart-lung, single-lung, and liver transplants. All pre- and post-operative outpatient care for these patients is now delivered in the new William P. and Gertrude Schweitzer Transplant Clinic. Another surgery highlight was the successful implantation of greater New York's first left ventricular-assist device (LVAD), a temporary mechanical heart for patients awaiting a donor heart.

Pharmacologists conducted several experiments in heart disease, including a

study of the use of an angiotensin converting enzyme (ACE) inhibitor in patients with heart failure and ventricular arrhythmias. Other investigators examined the role of the clotting factor, thrombin, in arrhythmias that occur after hemorrhagic MI. In yet another study, pharmacologists advanced a hypothesis that safer and more effective antiarrhythmic drugs might be agents that selectively enhance, rather than attenuate, membrane ion currents.

Immunologists in the Department of Medicine studied an unusual group of substances made by toads and snakes that bear a striking resemblance to digitalis, the potent, plant-derived heart medication. An understanding of the role of these compounds in salt and water regulation in experimental animals may help clarify the role of similar substances in human hypertensive and cardiac diseases.

The Institute of Human Nutrition continued its leadership roles in two national education campaigns: one to change the American diet in order to prevent heart disease and other major chronic ailments; the other, to improve





clinical management of patients with high blood cholesterol and teach the public about links between cholesterol and diet and heart disease.

Researchers in the Department of Pediatrics examined several aspects of atherosclerosis: more specifically, mechanisms that regulate cellular cholesterol hemostasis and interactions of plasma lipoprotein with cell lipoprotein receptors.

When cells go haywire

Like heart disease, cancer is a primary concern of many departments, including Medicine, which opened a bone marrow transplantation (BMT) program for patients with certain cancers and life-threatening hematologic disorders. BMT permits patients to undergo unusually intensive chemotherapy, which is toxic to the red blood cell-producing marrow.

Physicians at Columbia-Presbyterian were the first in the metropolitan area to employ linear-accelerated-based stereotactic radiosurgery for treatment of various brain abnormalities, including tumors and arteriove-

nous malformations. Guided by sophisticated, noninvasive imaging devices, such as MRI, radiation oncologists and neurosurgeons can now deliver a precise and powerful dose of radiation to previously inaccessible areas of the brain. In a second joint venture, these specialists investigated the use of neutron capture therapy (NCT) in treating brain tumors and melanomas. NCT exploits the ability of certain boron compounds to concentrate in tumor cells and absorb high doses of thermal neutron radiation.

Several new cancer-related services were established in 1990, including a photophoresis facility for patients with T-cell lymphoma, a psoriasis and cutaneous cancer center, a mammography center for inpatients and outpatients, and a rehabilitation medicine consultation service focusing on the special needs of patients with malignancies.

Columbia-Presbyterian urologists, who are known for their expertise in potency-preserving cancer surgery, investigated new chemotherapies for prostate

cancer patients who relapse after traditional therapy and topical medications for those with noninvasive bladder cancer. Other studies in this discipline addressed the questions: Can invasive bladder cancer be treated without bladder removal? and, Can less toxic immunotherapy for metastatic renal cell cancer be devised?

In the Department of Otolaryngology, investigators characterized inflammatory mediators that promote invasion of head and neck cancer and hearing loss in certain forms of chronic ear disease. Modification of the inflammatory response appears to help control cancer invasion and may inhibit bone destruction in chronic otitis media.

Two separate studies addressed important public health aspects of cancer. In a study related to the Three Mile Island nuclear reactor accident, epidemiologists found no significant association between the plant's emission of low-level radiation and childhood cancer or leukemia. A link between childhood cancer and natural outdoor (background) radiation was detected. In response to increasing public

concern over possible adverse health effects (including cancer) from high voltage transmission lines and other electrical sources, the Department of Physiology is looking into the influence of electrical stimuli on biologic systems.

Yet another facet of oncology was addressed by members of the Division of General Medicine, who investigated the use of decision analysis techniques to assist in the decision to use adjuvant chemotherapy for breast cancer.

Basic researchers in the School of Dental and Oral Surgery analyzed the spread of primary tumor cells to secondary sites, the major cause of morbidity in cancer patients. Once cells leave the primary site, the scientists report, they must pass through several connective tissue barriers before initiating a secondary infection in another organ. Apparently, each organ's protective membrane contains specific peptides that induce local recruitment and proliferation of metastasizing tumor cells. Elucidation of this mecha-



nism could lead to therapies directed only at tumor cells with the capacity to metastasize.

In the Department of Microbiology, researchers devised a test-tube assay for genetic recombinations, which are responsible for some human cancers. Another team isolated and characterized a novel type of papillomavirus from a genital lesion. Such viruses are implicated in several cancers.

When the immune system misfires

Viruses are also implicated in numerous immune system disorders, notably AIDS, a focus of innumerable clinical programs and investigations at the Medical Center. The virus behind AIDS, HIV, is known to infect and kill T lymphocytes (which are responsible for cell-mediated immunity and delayed hypersensitivity), yet somehow the virus also disrupts a great many T cells without infecting them. A possible explanation for this mysterious phenomenon was discovered by researchers in the Department of Physiology, who discovered a pathway by which regulatory factors from

HIV-infected cells are transferred to nearby uninfected cells. This may represent an important step in the pathogenesis of AIDS and may point to new therapeutic interventions.

The molecular biology of AIDS was also addressed by biochemists, neurobiologists, microbiologists, and geneticists. The former elucidated the structure of CD4, the surface protein on T cells that mediates their interaction with target cells as well as the AIDS virus. (This work was made possible by the development of a powerful method of determining protein structure, known as multiwavelength anomalous diffraction, or MAD.)

In the Department of Neurobiology, scientists isolated and characterized the gene encoding the CD4 protein. Meanwhile, microbiologists cloned the enzyme from the AIDS virus responsible for its replication. The drug sensitivity of this enzyme is now being analyzed with an eye toward developing better medical therapies. Finally, geneticists demonstrated that there is a severe depletion in

the amount of mitochondrial DNA in the muscles of AIDS patients suffering from AZT-induced myopathy (muscular weakness or wasting).

Several clinical investigations in AIDS were conducted. Specialists in infectious disease, for example, started clinical trials of new medications to treat bacterial and viral infections in immunocompromised patients, while dermatologists extended the use of photochemotherapy to patients with AIDS-related complex, otherwise known as ARC.

The Department of Psychiatry's Depression Evaluation Service began concurrent diagnostic studies of depression coupled with HIV infection, alcoholism, or drug addiction with the objective of reducing high-risk behavior. Psychiatrists were also responsible for two AIDS projects that won national awards: a prevention program called the "Triple A Project (Adolescent AIDS Awareness)" and a public service announcement, "AIDS, I'm Not Having It."

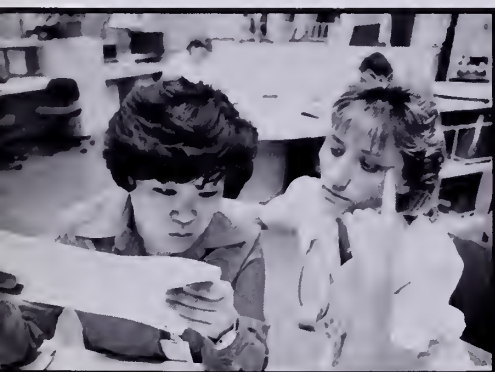
To learn more about the medical community's response to the AIDS epi-

demic, investigators in public health assessed the attitudes of various local health care providers towards people at high risk for this immune system disorder. A nationwide study is underway.

Further advances in immunology

Many other ailments are related to malfunctions of the immune system, including lupus erythematosus, which is characterized by inflammation of the connective tissue. Nephrologists in the Department of Medicine tested several new lupus medications, namely cyclosporine (normally used to prevent rejection of organ transplants) and cyclophosphamide.

A study in the Department of Neurology discovered a higher incidence of an immunological abnormality—monoclonal paraproteinemia—among patients with amyotrophic lateral sclerosis (ALS), a progressive motor neuron disease. They also demonstrated that monoclonal protein sometimes exhibits antibody activity against nerve cell mem-



branes. These findings suggest that immunosuppressive therapy may have value for ALS patients.

Numerous immunology studies were carried out by microbiologists. One researcher showed that infection with adenovirus results in the production of cytokines, proteins that cause the inflammatory response characteristic of serious disease. Still other microbiologists isolated and characterized proteins found only in antibody-producing cells that are required for expression of immunoglobulin-producing genes. Elsewhere in this field, investigators examined the ability of plasmid genes to transfer between different strains of bacteria. Plasmids, circular strands of genetic material that reside outside the cell's nucleus, are responsible for most bacterial drug resistance.

The efficacy of antibiotics against bacteria that grow inside macrophages was the subject of an inquiry of physiologists and infectious disease specialists. Macrophages defend the body against bacterial pathogens by ingesting them. However, some wily bacteria, notably those that cause tuberculosis and

Legionnaire's disease, have adapted to grow inside these white blood cells. In an attempt to counter this adaptation, the researchers have identified the pathway by which macrophages secrete quinoline antibiotics from their cytoplasm as well as substances that can inhibit this pathway. Such inhibitors may prove clinically useful in increasing the efficacy of these antibiotics.

In the Department of Medicine, immunologists studied cells cultured from the immune systems of normal and allergic patients in order to determine how these cells give rise to the IgE class of immunoglobulins that cause allergic disease.

In another area of immunology, pediatricians neared completion of tests of a new chicken pox vaccine. The vaccine appears quite effective and will most likely be licensed soon.

The genetic basis of disease

Researchers in the Department of Human Genetics and Development played a key role in the successful introduction of genetic mutations into the germ line

of mammals, a breakthrough that signalled a new era in genetic research. By altering or deleting genes, scientists will ultimately be able to determine a gene's normal role in embryonic development and physiology and create animal models for the study of human genetic disorders, with the ultimate goal of devising treatments.

Urologists, for example, worked on creating a transgenic mouse to study the genes involved in the development of prostate cancer. In the Division of Hematology, scientists tested the survival of human beta-globin genes in mouse bone marrow cells; gene therapies for thalassemias and sickle cell disease are a long-term possibility. Microbiologists crafted a transgenic mouse that expresses the human receptor for poliovirus, creating an alternative to the use of higher mammals for studying the basis of polio and formulating new vaccines.

Additional major genetic discoveries were made in the Department of Neurology. One laboratory determined that torsion dystonias that occur in Ashkenazi Jews and non-Jews result from abnormalities at the same chromo-

somal site, confirming that these dystonias are closely related.

Similarly, the Medical Center's neurologists, human geneticists, and psychiatrists were part of an international team that mapped the gene for spinal muscular atrophy, showing that three forms of the disease in childhood are closely related. In contrast, neurologists here concluded that hereditary Alzheimer's disease can be traced to abnormalities at two different gene sites, indicating that this disease is not one but at least two diseases. A formidable challenge for these various investigators is to translate these genetic discoveries into effective therapy.

Yet another neurology laboratory found that deletions of mitochondrial DNA are restricted to two groups of patients, those with a progressive paralysis of eye movements alone, and those with eye paralysis that is part of a multisystem disease affecting the retina, heart, brain, and spinal cord. This work yielded important insight into the control and function of mitochondrial



DNA and how messages from DNA are translated into cell products.

Physiologists examined the cellular and molecular bases of genetically determined high blood pressure and sensitivity to dietary salt in laboratory animals. At a very young age, these animals express inherited disorders in their immune system and in their renal response to dietary salt (i.e., prolonged salt exposure leads to hypertension). The investigators are now studying the underlying genetic abnormalities, pathogenesis, and links between these phenomena. Thus far, a number of heritable markers of salt sensitivity have been identified. Examination of such markers in humans will be undertaken to identify salt-sensitive individuals and families at risk of salt-induced hypertension.

Advances in neuromuscular disease

In 1989, a multicenter study involving the Department of Neurology found that a drug called deprenyl retards the progression of Parkinson's disease. It was the first medication to have such an effect. This year, the Department learned that deprenyl exerts

not only a symptomatic, but also a protective effect. The drug is now being tested on patients with ALS.

In another clinical advance, otolaryngologists and neurologists employed injections of botulinum toxin to manage uncontrolled muscle spasms of the larynx that can prevent normal speech and communication by inappropriate opening or closure of the vocal chords. Other clinicians extended the use of this toxin to those with spastic dysphonia, writer's cramp, and spasmodic torticollis.

In more basic neurological research, scientists in the Center for Neurobiology and Behavior employed electrophysiological and psychological techniques to analyze mechanisms that underlie complex multijoint movements. Several studies in the Gertrude H. Sergievsky Center focused on white matter lesions in the brain, which in very small infants are powerful predictors of cerebral palsy. One team investigated the cause and pathogenesis of such lesions, while another found that ultrasonography is a very specific and reasonably sensi-

tive diagnostic tool for these lesions.

The neurologic problems of older patients were addressed in the Department of Neurology, which collected data to identify all cases of Alzheimer's disease and Parkinson's disease in northern Manhattan, hoping to identify risk factors in the various cultural groups. Using this same cohort, their colleagues studied the role of stroke and other forms of vascular disease in causing dementia as well as the risk factors for stroke. Another study assessed the protective effects of calcium blockers in stroke patients; these drugs seem to have a beneficial effect and to limit damage to the brain.

One noteworthy clinical advance was the establishment of a Comprehensive Epilepsy Center for patients with uncontrolled seizures at the Medical Center and one of its affiliates, Helen Hayes Hospital. The center's wide-ranging services include diagnostic electrophysiologic monitoring, neuroimaging, neuropsychiatric testing, surgical treatment, rehabilitative and psychosocial care, and clinical trials of antiepileptic drugs.

Perhaps the most dramatic clinical advance of 1990 was a new surgical procedure for large aneurysms in which the patient's body temperature is drastically lowered and cardiac arrest is deliberately induced. The technique, a collaborative effort of cardiac surgeons, neurologists, and anesthesiologists, permits safe repair of previously untreatable aneurysms.

The mind-body problem

The Department of Psychiatry was one of three sites to receive National Institute of Mental Health funding to establish a Diagnostic Center for Collaborative Psychiatric Linkage Studies in Schizophrenia. In the largest study of its kind ever undertaken, the centers will collect diagnostic and genetic data on 200 families heavily laden with cases of schizophrenia. A related effort, in the Department's new Schizophrenia Research Unit, will attempt to sort out the genetic and environmental factors in schizophrenia and clarify the illness' different subtypes, employing neurophysiological, -chemical, -



psychological, -radiological, and -immunological measures.

Continuing their long-standing contributions to the refinement of diagnostic criteria, Columbia-Presbyterian psychiatrists started production of the fourth version of the widely used Diagnostic and Statistical Manual (DSM-IV). Meanwhile, researchers in the Center for Psychoanalytic Training and Research continued investigations into structured DSM assessment of psychoanalytic patients, sexual fantasies in adults, anxiety disorders, outcome, and prediction of analyzability.

A new SPECT (single photo emission computerized tomography) imaging program will soon give psychiatrists improved, noninvasive images of brain physiology, allowing comparisons of brain activity during periods of rest and during administration of pharmacologic and behavioral challenges.

Psychiatry's outpatient service at The Allen Pavilion became one of four pilot locations for New York State's new Comprehensive Psychiatric Emergency Program (CPEP). CPEP

services, which are geared toward patients with psychiatric illness and substance abuse problems, include holding beds that are staffed like inpatient beds and a mobile crisis service for community outreach. In related developments, the psychiatric day-treatment program at the Fort Washington Armory was awarded a grant to study issues in the treatment of homeless mentally ill men, and senior staff members were recruited to create a treatment and research center focusing on psychiatric problems among the city's Hispanic population.

From germ cells to children

The earliest stages of the life cycle were addressed by a variety of specialists at Columbia-Presbyterian. In the Center for Reproductive Sciences, researchers studied neuroendocrine systems that control the ovulatory menstrual cycle of laboratory animals, with an overall goal of elucidating the pathways that may relate stress to anovulatory syndromes and infertility. Identification of the signals that underlie early

development and organization of the central nervous system was the focus of an inquiry in the Department of Physiology. Researchers in nutrition found that retinoids (vitamin A compounds) play key roles in regulating cell differentiation and directing embryonic development. The role of the placenta in transporting retinoids from the maternal circulation to the fetus was also examined. Endocrinologists addressed the role and regulation of corticotropin-releasing hormone in pregnancy as well as the protein chemistry and immunochemistry of human chorionic gonadotropin (HCG).

In the Department of Obstetrics and Gynecology, plans were made to establish a birthing center that will permit women to experience all phases of childbirth—from labor and delivery to recovery and postnatal care—in the same comfortable and attractive room.

Concurrently, pediatricians identified the consequences of pre- and postnatal lead exposure in children and discovered that long-term storage of wines and spirits in lead crystal decanters leads to elution of

potentially dangerous quantities of lead. From studies of pulmonary hypertension, a very serious and debilitating condition of children, pediatricians learned that this condition is characterized by obstruction of small airways in the lungs, which worsens as the disease progresses.

In the Department of Human Genetics and Development, scientists researched treatments for inherited hemoglobin disorders, specifically, sickle-cell disease and Cooley's anemia. The latter is one of the most serious health problems worldwide, accounting for hundreds of thousands of childhood deaths each year. Children—even those as young as three weeks of age—with such dermatologic abnormalities as port wine stains, hemangiomas, and telangiectasias are now being treated with pulsed dye lasers; the treatment is useful in adults as well.

The aging body

At the other end of the life cycle, rehabilitation medicine scientists investigated various aspects of menopause,



including menopausal thermoregulation, relationships between sleep state and hot flashes, and the epidemiology of hot flashes. In the Department of Orthopedics, surgeons prepared the way for on-site manufacture of custom-made hip prostheses, which are designed and manufactured *during* the hip replacement procedure. Elsewhere, occupational therapists studied the effects of continuous passive motion on knee range of motion and pain in patients who have total knee replacements.

In collaboration with the Regional Bone Center of Helen Hayes Hospital, endocrinologists explored the assessment, epidemiology, and pathophysiology of osteoporosis. In the Department of Medicine's new Lithotripsy Center, physicians began using shockwaves to dissolve kidney stones, another problem common to older people; a clinical trial of biliary lithotripsy is underway.

Researchers in the Division of General Medicine explored a number of aspects of geriatric care, including cultural bias in instruments commonly used to assess

depression and dementia, malnutrition, and discussion of "do not resuscitate" orders with ambulatory patients.

Educational resources

A central mission of an academic medical center is to educate health professionals. Among 1990's educational highlights was a dual master's degree established by the School of Nursing and the School of Business that prepares nurses for high-level management positions in clinical settings. Another milestone was creation of the first endowed professorship in Nursing. The new Centennial Chair in Health Policy is the first such professorship in a school of nursing.

The School of Nursing also fully implemented its innovative model of nursing education, a four-part program consisting of faculty practice, one-to-one clinical instruction from a practicing nurse, accelerated baccalaureate and master's programs, and tuition-for-service clinical partnerships between hospitals and students. Finally, the School, which

has experienced a dramatic increase in minority enrollment, opened an Office of Multicultural Affairs, which offers academic, financial, personal, and professional guidance and serves as a catalyst for improving intercultural understanding in all School matters.

New graduate programs were also started in the School of Public Health, including a "weekend" master's program in health services management for working professionals and, in conjunction with the Department of Radiation Oncology, master's and doctoral programs in medical/health physics. In addition, the School was among four public health programs nationwide to receive federal funding for a special project aimed at increasing enrollment of under-represented minority students.

The education of medical students was greatly improved with a new series of lectures in radiation oncology and the opening of a new radiology conference room featuring state-of-the-art audio-visual equipment and computers. Educators in dermatology established residency programs in laser

surgery and dermatologic surgery (including the use of local flaps and grafts) and in the care of nail disease.

In the School of Oral and Dental Surgery, educators devised an innovative mode of preclinical education in prosthodontics, incorporating both self-paced instruction and computer technology. In addition, the School formed a multidisciplinary team of periodontists, prosthodontists, and oral maxillofacial surgeons to teach implant procedures and a group practice clinic to prepare dental students for their initial patient care experience.

Summer-long research fellowships for eleven high school teachers were offered by the Department of Physiology and Cellular Biophysics. The program's goal is to give science teachers hands-on experience in the practice of science so that they will be better able to transmit to their students the concepts and culture of modern science. When fully operational, fellowships will be awarded to 20 teachers each year.



Administrative Report of The Presbyterian Hospital

The Presbyterian Hospital's recent administrative reorganization and long-term modernization programs began to pay off in 1990, stabilizing and strengthening the institution's financial and clinical picture. Of particular note was the Hospital's fiscal turnaround, evidenced by a two-thirds reduction in the operating deficit. In spite of recent economic setbacks, the Hospital's clinical excellence was maintained—an opinion shared by U.S. News & World Report, which rated the Hospital among America's top eleven health care institutions. It was the only hospital in New York State so cited.

New management structure

Many forces were behind Presbyterian's renewal, including a major administrative reorganization. Following successful business models, the institution's operational component was divided into six separate management centers: the Milstein Hospital Building and Harkness Pavilion; Babies Hospital and Sloane Hospital for Women; Allen

Pavilion; Ancillary Services; Ambulatory Services; and Facilities and Services. Decentralization permitted closer managerial scrutiny of day-to-day operations and increased accountability.

The non-operational components of the Hospital were similarly reorganized. All administrative functions including finance, planning, legal, and human resources were consolidated. Administration, along with medical affairs and nursing, provide the staff functions to support the operational management centers. At the top of the management pyramid is the newly established Office of the Chairman (supplanting the president's office), which consists of Seymour Milstein, Chairman of the Board of Trustees, Sidney J. Weinberg, Jr., Vice Chairman, and Harry J. Bolwell, consultant to the Board.

More patients, shorter stays
Adding to the Hospital's fiscal recovery was a record number of patient discharges along with a substantial reduction in the average patient length of stay. (Under the DRG system, hospitals

are reimbursed a fixed amount per discharge, regardless of the length of hospitalization; thus, hospitals are rewarded by speeding the recovery and discharge of patients.) By improving discharge planning, the scheduling of tests and procedures, and staff efficiency and communication, the typical inpatient stay was cut almost seven percent, nearly two-thirds of a day, while maintaining the highest level of care.

Another important factor was renegotiation of the Hospital's mortgage. Short-term debt was converted into long-term debt at lower interest rates, which improved cash flow, reduced accounts payable, and allowed the resumption of more normal borrowing patterns (i.e., short-term for working capital and long-term for capital projects).

A successful appeal to New York State, realizing a more appropriate reimbursement rate for the Ambulatory Care Network Corporation (ACNC), also brightened the financial picture.

Still another factor in the Hospital's recovery was an eight percent increase in the number of discharges (i.e.,



cases treated). The recruitment of 50 additional staff physicians in 1990 was partly responsible, since physicians are the ones who refer and admit patients. Administrators are now working on a referral network with hospitals in surrounding communities to increase patient volume further. Many patients were undoubtedly attracted to the Hospital's new tertiary care facility and community hospital—The Milstein Hospital Building and The Allen Pavilion—both now fully operational.

Substantial savings also resulted from an institution-wide operations improvement program, which successfully enhanced Hospital efficiency, staffing patterns, and supply functions.

Significant challenges remain

All of these achievements, however, had little effect on some of the Hospital's most significant and recalcitrant financial strains—unreimbursed or under-reimbursed care. This is a consequence of Presbyterian's status as the sole hospital in one of the city's most economically dis-

advantaged neighborhoods, Washington Heights/Inwood. Millions of dollars of health care were provided to the uninsured, a longtime Presbyterian tradition. Moreover, the Hospital treated a substantial number of Medicaid patients, who are generally sicker than the average patient, necessitating extra-long inpatient stays—a costly trend under the DRG system.

The Ambulatory Care Network Corporation, a network of primary care facilities located throughout the community, was established a few years ago to bring basic care to the local residents, but the benefits of this outreach program are long-term. One promising sign, however, is that in 1990 visits to the emergency room (main campus) declined while visits to the outpatient primary care clinics increased, suggesting that local residents are seeking care earlier and using services more appropriately.

The Management Centers
The 745-bed Milstein Hospital Building was fully activated with the opening of the Neurology and Neurological Surgery inpatient suites and the McKean Pavil-

ion for private patients. In the Harkness Pavilion, a new short-stay unit was created to ease the backlog of patients from the emergency room. As a result of these developments, the Milstein/Harkness management center surpassed its discharge budget for 1990.

In Ambulatory Services, the staff instituted significant administrative changes, including a reorganization of all clinics under the jurisdiction of the ACNC. Moreover, new management tools were developed, permitting better tracking of utilization, payor mix, revenue, and productivity in each clinic. Finally, personnel costs were reconfigured, for the first time linking the cost of various workers, such as nurses, to specific clinics.

At Babies Hospital/Sloane Hospital for Women, the opening of a six-bed step-down, next to the pediatric intensive care unit, allowed all pediatric neurosurgery to be consolidated in one site. The new beds also provide an intermediate level of care for medical and surgical patients who are too sick to return to the floor yet not in need of intensive care. Babies

Hospital appointed a surgeon-in-chief and a director of pediatric otolaryngology, and expanded capabilities in pediatric cardiology.

Services continued to expand at The Allen Pavilion, the only new full-service community hospital to open in New York in decades. Treatment is now offered in medicine, orthopedics (including a spine service), obstetrics and gynecology, general and ambulatory surgery, intensive/coronary care, urology, neurology, psychiatry, occupational and physical therapy, and radiology.

Outreach programs at Allen were instituted to cultivate linkages with community physicians, nursing homes, and skilled nursing facilities. In addition, this community hospital also started special care services for patients with asthma and sickle cell disease.

Allen is developing plans for Labor-Delivery-Recovery-Postpartum rooms so mothers can experience all aspects of childbirth in one room without having to be moved. There also are plans to expand laboratory capabilities in microbiology, histology, and pathology because of increased testing volume.



*Administrative
Report of
Columbia University
Health Sciences*

Columbia University's Health Sciences Center, known throughout the world for the excellence of its leadership and the quality of its faculty, students, and alumni, is committed to continuing its mission into the next century at the same high level.

In some ways it will not be a difficult task. Excellence attracts excellence. We are uniquely favored with four schools of international reputation—medicine, dentistry, nursing, and public health, with remarkably varied and prestigious affiliated hospitals, and with a scientific research endeavor that is both broad and deep. Our exceptional roster of scientists are solving problems at every level of medicine from basic research to public health. Our students are exceptional: bright, caring, with wide interests and a desire to excel. Columbia people are our richest resource; with their commitment to learning, teaching, and healing, they shape a complex institution whose ultimate beneficiary is all of humanity.

One of the biggest challenges of our future is educating physicians for the future. The physician's role in health care has changed and is still changing dramatically. Legal and ethical issues once unheard of in doctors' offices now pose daily dilemmas. Third party payment and government oversight are making physicians less autonomous and increasingly subject to constraints. And a growing emphasis on preventive medicine and the patient's responsibility in medical care means that physicians require new kinds of training and information.

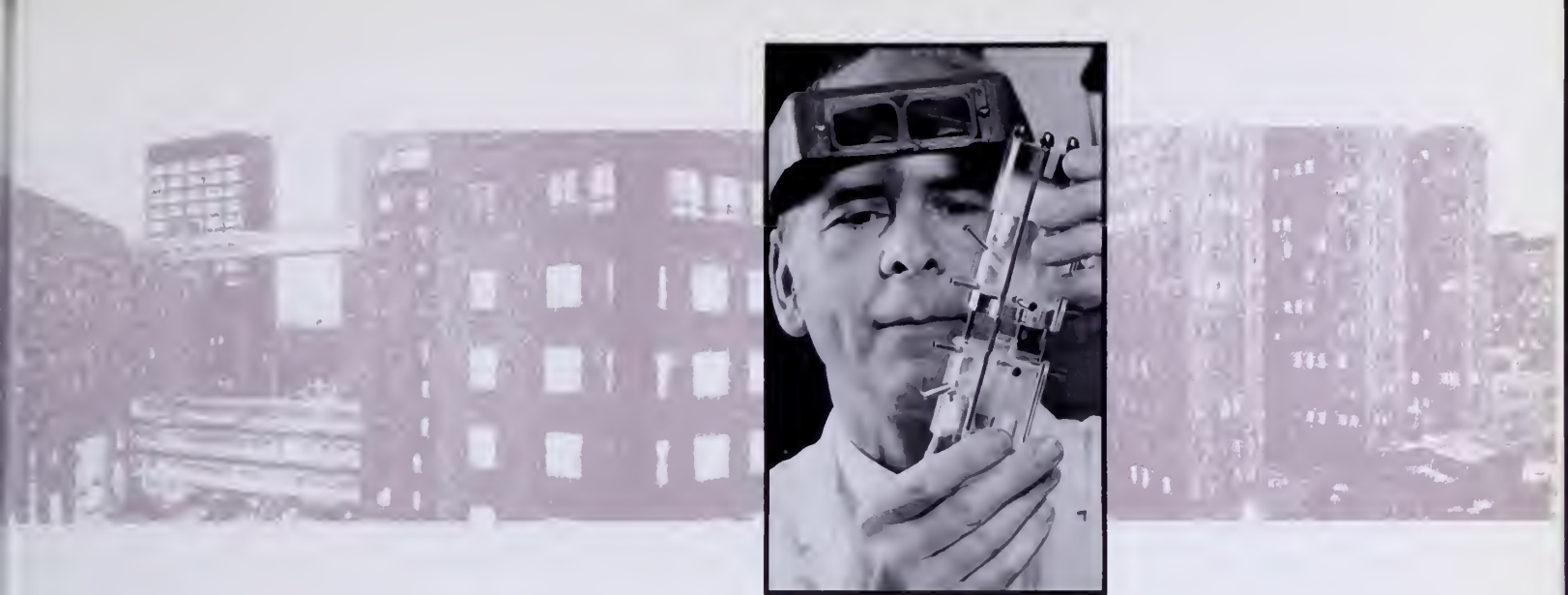
We are fully engaged in the process of examining our educational programs. This, of course, entails re-evaluating and changing our curriculum. But our present effort involves more than is implied in the traditional notion of "curriculum revision."

This effort began in 1989 and has been greatly assisted by a two-year planning grant awarded in 1990 by the Robert Wood Johnson Foundation. Among the many who must be singled out for recognition of their leadership

in this effort are Drs. Henrik H. Bendixen, Samuel Silverstein, and Ronald Drusin.

To prepare our students for the health care delivery system in which they will practice, we expect to maintain (or strengthen) the current high level of clinical and scientific training. Beyond that, we will enrich the curriculum with experiences and course material our planners identify as essential. Among long-neglected areas that will be woven into the new curriculum will be nutrition, preventive medicine, and epidemiology, recognizing that the health of an individual—and the risks to that individual—are powerfully affected by the health of larger groups to which that individual belongs. It is overwhelmingly clear that medical education must take into consideration the continuum between the "big picture" of public health to the personal actions that result in or prevent illness.

There will be a strong emphasis on primary care. We hope to increase students' clinical contacts with patients so that they will have the experience of caring for



one individual over an extended period. We want to decrease lecture time in favor of more active involvement in learning and to give students more control over their studies. To further this we plan to create computer-based learning centers. For a student doing clinical work, this might mean having access to patient information, laboratory findings, and library references all at one site.

No matter what changes in material or methodology eventually become part of the medical school curriculum, our goal remains constant: to produce first-class doctors who understand their patients' problems and who become leaders in their fields.

As we move ahead on these fronts, we also plan to expand our already-outstanding biomedical research effort in all major areas. We have developed matchless programs in transplant surgery, neurosurgery, the neurosciences, immunology, structural biology, cellular and molecular biophysics, genetics, and a number of other "cutting edge" disci-

plines. Within the next five to seven years we expect to recruit even more of the best scientists in these fields; among other specific projects will be the creation of a transgenic mouse facility to support our leadership in genetic manipulation as a path to knowledge and to disease prevention and treatment.

Our training program for young scientists is already powerful. Our M.D.-Ph.D. program is among the strongest in the country and our graduate training programs compete successfully for the best young scientists. We hope to develop these programs even further.

Finally, although the central focus of our activities is the medical school, preparation for the health care of the future depends upon—and is greatly enhanced by—the inclusion of the other Health Sciences schools in the effort. We see the future of health care as involving a pervasive interdependence among specialists in medicine, dentistry, nursing, public health, and allied health disciplines.

These Health Sciences schools are moving forward toward their own goals. Both Nursing and Dental and Oral Surgery have recently reshaped their programs and recruited distinguished faculty. Among the significant changes in dentistry is a new emphasis on quality research; early oral manifestations of AIDS is one current project. The Nursing School has created a number of innovative clinical settings for its students and provided new research opportunities. The increased enrollment of re-entry students—those who are returning to nursing after other careers—is only one indication of the program's early success.

The School of Public Health has greatly enhanced its activities in guiding and shaping public policy on a number of issues, including health care financing, AIDS, and drug abuse. The School is expanding its programs in epidemiology. It is actively involved in "hands on" public health as well; working with Harlem Hospital, it recently established a center whose goal is to reduce the Harlem community's

excessive morbidity and mortality rates.

Columbia is an urban school and the Health Sciences are within a highly compressed campus, which requires unusual efforts both in recruitment and in providing an atmosphere that encourages our best efforts. To attract the brightest and best students and scientists, we need to make this environment as congenial as possible, in a variety of ways. For example, because our students become leaders wherever they go, and because the future of medicine demands that minorities be strongly represented among those leaders, we will exert our best efforts toward attracting minority students. We have already increased our scholarship commitment to this goal.

These are only a few of the ways in which we are now concentrating our energies to perpetuate the Columbia Health Sciences' status as an extraordinary institution, rich in history and dynamic in the present and future.

Herbert Pardes, M.D.

Development Activities The Presbyterian Hospital



In August 1990, The Presbyterian Hospital Board of Trustees launched the most ambitious and challenging fund-raising effort in its history—a campaign to raise \$150 million for continued excellence in health care. The Campaign will raise much needed funds for improved facilities, new program initiatives, and the augmentation of the endowment. Arthur Ryan, president of Chase Manhattan Bank and Presbyterian Hospital trustee, is chairman of the Campaign. The following trustees are Campaign Vice Chairmen: Mark Andrews, Robert H.B. Baldwin, David I. Margolis, Gordon B. Pattee, and Sydney J. Weinberg, Jr. Under their leadership, the Campaign generated more than \$24 million in 1990.

The profound generosity already demonstrated by a gratifying number of individuals, corporations, and foundations serves to set an

example to all those who share in a bright vision of the future for Presbyterian. Notable among these is the ITT Corporation, which demonstrated its continuing commitment to the City of New York with a \$1.2 million contribution to The Edward S. Harkness Eye Institute. This outstanding example of philanthropy enables Presbyterian's distinguished ophthalmologic department to renovate its eye clinic, which serves thousands of residents in Washington Heights/Inwood.

Consolidated Edison of New York contributed generously in support of the AIDS Center Project at The Presbyterian Hospital. This exciting partnership will provide for continuous and comprehensive care of adult AIDS patients in new inpatient and outpatient settings on the renovated fifth floor of the Harkness Pavilion. The Ira W. DeCamp Foundation joined Con Ed in providing funds for the AIDS Center, again demonstrating the importance of the corporate and philanthropic communities to the life and mission of Presbyterian Hospital. The

Hospital also was the beneficiary of an \$18 million planned gift from an anonymous donor in addition to many other bequests and testamentary gifts.

The number of donors to the Presbyterian Hospital Annual Giving Fund, under the leadership of Mark Andrews, Trustee Chairman of Annual Giving, virtually doubled, generating a record \$4.3 million in gifts—a \$1 million increase over 1989! The James Lenox Society, named in recognition of the founder of The Presbyterian Hospital, enrolled 117 members, each of whom contributed \$1,000 or more to provide vital resources for the daily operation of the Hospital.

The Annual Gala, co-chaired by Mrs. Howard L. Clark and Mrs. Constance Milstein Lederman, was held on April 19 at the Waldorf-Astoria, with 1,100 friends of the Hospital in attendance. An unprecedented \$1.28 million was raised at this event, which was held to benefit the restoration of the Harkness Pavilion.



Health Sciences Campaign Passes First Third of Goal

The Health Sciences Center has received a total of \$125 million in gifts and pledges toward its \$335 million share of the goal for Columbia University's new \$1.15 billion capital campaign which was announced on September 25, 1990. (This goal includes \$150 million for the Presbyterian Hospital.)

Led by Columbia trustee Joseph D. Williams, Chief Executive Officer of Warner Lambert, the five-year campaign involves many participants from the Health Sciences faculty and a growing number of volunteers from the private sector.

As part of the Health Sciences goal for the Columbia campaign, a special drive seeking \$15 million has been launched by the faculty of the Department of Medicine, primarily for renovation of facilities and for development of the next generation of outstanding clinicians, investigators and teachers.

The College of Physicians and Surgeons has received many important contributions toward the campaign goal, including: The Lucille P. Markey Charitable Trust

gift of \$6.5 million, the Edith Dunshee Converse bequest of \$4.8 million; \$2.9 million from the estate of George Driver; \$2.1 million from the Lila Wallace Fund to establish the Stinchfield Chair in Orthopedic Surgery; \$1.5 million from the Margaret Milliken Hatch Trust and the Cobble Pond Foundation to create the Harold Ames Hatch Professorship in Cardiology; \$1.5 million from the Lucy and Henry Moses Fund for The Center for Neurological Clinical Genetics; \$1 million from the Hatch Trust for cancer research and surgery; \$1.6 million from the estate of John Bohmfalk for medical scholarships as well as awards for faculty distinction; \$1 million from Mrs. Lilyan Kreitchman for the purchase of a PET scanner; and anonymous gifts totaling \$2.5 million.

The School of Nursing has initiated a program to obtain \$3 million as part of the celebrations for its 100th birthday in 1992. Gifts and pledges totalling nearly \$2 million have been made toward the Centennial goal, and a \$1 million endowment completed for the School's new Centennial Chair, the

first health policy chair in any nursing school.

More than \$2 million has been contributed to the School of Dental and Oral Surgery for its \$7.3 million campaign, inaugurated in October 1990 to coincide with the School's 75th anniversary of incorporation at Columbia. Dean Alan Formicola has noted especially the generosity of dental professors emeriti Drs. Frank Beube and Robert Gottsegen to the periodontics education and research fund which has been named for them.

Dean Allan Rosenfield of the School of Public Health has formed an advisory council to aid him in broadening public awareness of the School. Among major gifts so far have been \$3 million from The Ford Foundation to the National Center for Children in Poverty, and \$700,000 from the Hewlett Foundation to the Center for Population and Family Health. Scholarship aid to minorities will be supported with a unitrust of \$1.4 million from Mrs. Rita Wyman, given in memory of her husband, Dr. Randolph Wyman, a former adjunct professor at the School.

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Philip O. Alderson, M.D.
Radiology
 Andrew Blitzer, M.D.
Otolaryngology (Acting)
 Harold S. Dick, M.D.
Orthopedic Surgery
 Anthony Donn, M.D.
Ophthalmology
 Alan T. Formicola, D.D.S.
*Chairman
 Dental & Oral Surgery*
 Michael Katz, M.D.
Pediatrics
 James Sanford Lieberman, M.D.
Rehabilitation Medicine
 John Lindenbaum, M.D.
Medicine (Acting)
 Edward D. Miller, Jr., M.D.
Anesthesiology
 John M. Oldham, M.D.
Psychiatry
 Carl A. Olsson, M.D.
Urology
 Keith Reemtsma, M.D.
Surgery
 Mortimer Rosen, M.D.
Obstetrics & Gynecology
 Steven M. Roser, M.D., D.M.D.
*Director
 Dental & Oral Surgery*
 Lewis P. Rowland, M.D.
Neurology
 Peter Schiff, M.D.
Radiation Oncology
 Michael L. Shelanski, M.D.
Pathology
 Bennett M. Stein, M.D.
Neurological Surgery
 Robert Walther, M.D.
Dermatology (Acting)

Chairmen Basic Science Departments

Argiris Efstratiadis, Ph.D.
Genetics & Development
 Michael D. Gershon, M.D.
Anatomy & Cell Biology
 Brian Hoffman, M.D.
Pharmacology
 Alvin Krasna, M.D.
*Biochemistry & Molecular
 Biophysics (Acting)*

Michael L. Shelanski, M.D.
Pathology
 Samuel Silverstein, M.D.
Physiology & Cellular Biophysics
 Saul Silverstein, Ph.D.
Microbiology (Acting)

Centers and Institutes

Robert E. Canfield, M.D.
*Irving Center for Clinical
 Research*
 Paul D. Clayton, Ph.D.
Center for Information Science
 Dewitt S. Goodman, M.D.
Institute of Human Nutrition
 Maxwell Gottesman, M.D.
Institute of Cancer Research
 Barry J. Gurland, M.D.
*Center for Geriatrics
 & Gerontology*
 Georgiana Jagiello, M.D.
 Allan Rosenfield, M.D.
*International Institute for
 the Study of Human
 Reproduction*
 Eric Kandel, M.D.
*Hughes Institute for
 Molecular Neurobiology*
 John Koester, M.D.
*Center for Neurobiology
 & Behavior*
 Dennis F. Kohn, D.V.M.
*Institute of Comparative
 Medicine*
 James McCarthy, M.D.
*Center for Population &
 Family Health*
 Ethel S. Person, M.D.
*Center for Psychoanalytic
 Training & Research*
 David Rothman, Ph.D.
*Center for the Study of Society
 & Medicine*
 Richard Mayeux, M.D.
Gertrude Sergievsky Center
 I. Bernard Weinstein, M.D.
Comprehensive Cancer Center

The Presbyterian Hospital Financial and Statistical Review

Fiscal Year Ended December 31, 1990
(in thousands)

	1989	1990
Net patient revenues plus other operating revenues	\$490,984	\$596,732
Operating expenses before provision for depreciation and interest	451,378	519,252
Income from operations before provision for depreciation and interest expense	39,606	77,480
Interest expense	28,526	44,652
Depreciation and amortization	57,815	53,523
Income (loss) from operations	(46,735)	(20,695)
Net non-operating revenues	2,720	4,448
Excess (deficiency) of revenues over expenses	(44,015)	(16,247)

Inpatient Statistics

	1989		1990	
	Adult Pediatric	Newborn Nursery	Adult Pediatric	Newborn Nursery
Average bed complement	1,413	69	1,419	69
Patient days	432,721	24,334	443,133	22,987
Admissions	41,147	5,166	44,993	5,591
Average length of stay	10.48	4.83	9.87	4.11

Outpatient Statistics

	1989	1990
Number of visits:		
Medicaid	246,104	316,234
Medicare	70,436	66,326
Blue Cross/Commercial	18,366	20,568
Self-pay	143,403	116,296
Personnel and dependents	18,068	13,318
Total	496,377	532,742
Doctors' offices	283,238	287,475
Grand Total	799,615	820,217

A copy of the last financial report filed with the Department of State may be obtained by writing to New York State, Department of State, Office of Charities Registration, Albany, N.Y. 12231 or the Finance Department, The Presbyterian Hospital, Columbia-Presbyterian Medical Center, New York, N.Y. 10032-3784.

Columbia University Health Sciences Division 1990 Highlights

(in thousands)		
Academic Expenditures:		
College of Physicians and Surgeons	\$293,671	
School of Dental and Oral Surgery	12,631	
School of Nursing	4,609	
School of Public Health	18,379	
	329,290	
Operating Expenditures:		
Library	1,210	
Physical Plant and Utilities	7,974	
Building and Equipment Maintenance	1,866	
Custodial Services	2,291	
Security	1,801	
	15,142	344,432
Asset Accounts*		
Gifts and Receipts Balance		
College of Physicians and Surgeons	17,742	
School of Dental and Oral Surgery	710	
School of Nursing	251	
School of Public Health	3,808	
	22,511	
Endowment		
College of Physicians and Surgeons	172,657	
School of Dental and Oral Surgery	3,911	
School of Nursing	1,282	
School of Public Health	90	
	177,940	
Quasi Endowment		
College of Physicians and Surgeons	66,415	
School of Dental and Oral Surgery	91	
School of Nursing	5,033	
School of Public Health	8,312	
	79,851	280,302
Number of Students		
Medical School	593	
Other Faculty of Medicine Programs	185	
School of Public Health	516	
School of Nursing	415	
School of Dental and Oral Surgery	299	
GSAS**	331	
	2,339	
Full-time Faculty		
College of Physicians and Surgeons	1,133	
School of Dental and Oral Surgery	57	
School of Nursing	36	
School of Public Health	102	
	1,328	

*Includes funds in Columbia University and CPMC Fund Inc.

**Graduate School of Arts and Sciences candidates in the medical, public health, and dental schools

Professional Staff

Consultants

George A. Carden, M.D.
Medicine

Robert E. Carroll, M.D.
Orthopedic Surgery

John J. Conley, M.D.
Otolaryngology

David Cowen, M.D.
Pathology

M. Irene Ferrer, M.D.
Medicine

Lothar Gidro-Frank, M.D.
Psychiatry

Eli Goldensohn, M.D.
Neurology

Sylvia P. Griffiths, M.D.
Pediatrics

David V. Habif, M.D.
Surgery

Raffaele Lattes, M.D.
Pathology

John K. Lattimer, M.D.
Urology

Edgar Leifer, M.D.
Medicine

Keith D. McElroy, M.D.
Orthopedic Surgery

George R. Merriam Jr., M.D.
Ophthalmology

Robert S. Mumford, M.D.
Psychiatry

Bernard L. Pacella, M.D.
Psychiatry

Kermit L. Pines, M.D.
Medicine

Conrad L. Pirani, M.D.
Pathology

Jules C. Waltner, M.D.
Otolaryngology

Philip D. Wiedel, M.D.
Surgery

James A. Wolff, M.D.
Pediatrics

Consultants Emeriti

Hugh Auchincloss, M.D.
Surgery

David H. Baker, M.D.
Radiology

Harold G. Barker, M.D.
Surgery

Viola W. Bernard, M.D.
Psychiatry

Stanley E. Bradley, M.D.
Medicine

Gordon M. Bruce, M.D.
Ophthalmology

Howard G. Bruenn, M.D.
Medicine

Charles J. Campbell, M.D.
Ophthalmology

Sidney Carter, M.D.
Neurology

James W. Correll, M.D.
Neurological Surgery

Stuart W. Cosgriff, M.D.
Medicine

George F. Crikelair, M.D.
Surgery

Edward C. Curnen Jr., M.D.
Pediatrics

Robert C. Darling, M.D.
Rehabilitation Medicine

Felix E. Demartini, M.D.
Medicine

Arthur Gerard De Voc, M.D.
Ophthalmology

Nicholas A. DiSalvo, D.D.S.
Dentistry

Philip E. Duffy, M.D.
Pathology

Rose R. Ellison, M.D.
Medicine

Solon A. Ellison, D.D.S.
Dentistry

Charles W. Findlay, M.D.
Surgery

Charles A. Flood, M.D.
Medicine

Henry Clay Frick II, M.D.
Obstetrics & Gynecology

Alexander Garcia, M.D.
Orthopedic Surgery

Edgar C. Hanks, M.D.
Anesthesiology

Frederic P. Herter, M.D.
Surgery

George H. Humphreys, II, M.D.
Surgery

Harold W. Jacox, M.D.
Radiology

Austin D. Johnston, M.D.
Pathology

Lawrence C. Kolb, M.D.
Psychiatry

Robert A. Kritzler, M.D.
Medicine

Vance Lauderdale Jr., M.D.
Anesthesiology

Irwin D. Mandel, D.D.S.
Dentistry

Lester C. Mark, M.D.
Anesthesiology

Richard L. Masland, M.D.
Neurology

Melvin L. Morris, D.D.S.
Dentistry

Melvin L. Moss, D.D.S.
Dentistry

Lester A. Mount, M.D.
Neurological Surgery

Equinn W. Munnell, M.D.
Obstetrics & Gynecology

Gabriel G. Nahas, M.D.
Anesthesiology

Henry I. Nahoum, D.D.S.
Dentistry

Charles S. Neer II, M.D.
Orthopedic Surgery

Shih-Hsun Ngai, M.D.
Anesthesiology

Charles A. Perera, M.D.
Ophthalmology

J. Lawrence Pool, M.D.
Neurological Surgery

Herbert Rackow, M.D.
Anesthesiology

Solomon N. Rosenstein, D.D.S.
Dentistry

Ernest Salanitro, M.D.
Anesthesiology

Thomas V. Santulli, M.D.
Surgery

Henry G. Schaffeld, M.D.
Medicine

Edward B. Schlesinger, M.D.
Neurological Surgery

Hamilton Southworth, M.D.
Medicine

Frank E. Stinchfield, M.D.
Orthopedic Surgery

John V. Taggart, M.D.
Medicine

Samuel F. Thomas, MD.
Neurology

W. Duane Todd, M.D.
Obstetrics & Gynecology

Theodore B. Van Itallie, M.D.
Medicine

Ralph J. Vecnema, M.D.
Urology

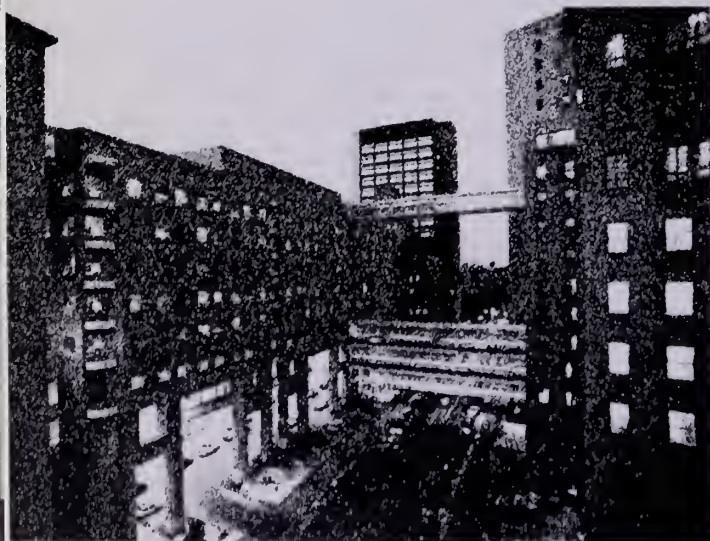
Carmine T. Vicale, M.D.
Neurology

Arthur B. Voorhees, M.D.
Surgery

Robert J. Weiss, M.D.
Psychiatry

Sidney C. Werner, M.D.
Medicine

Robert H. Wylie, M.D.
Surgery



ANESTHESIOLOGY

Director of Service

Edward D. Miller, M.D.

Attending Anesthesiologists

Henrik H. Bendixen, M.D.
Leonard Brand, M.D.
Donald C. Brody, M.D.
Mieczyslaw Finster, M.D.
Allen I. Hyman, M.D.
Richard S. Matteo, M.D.
Eugene J. Pantuck, M.D.
Hilda Pedersen, M.D.
Lubos Triner, M.D.

Associate Attending Anesthesiologists

Ellise S. Delphin, M.D.
Arthur D. Finck, M.D.
Carolyn P. Greenberg, M.D.
Hoshang J. Khambatta, M.D.
Patricia J. Martin, M.D.
Eugene Ornstein, M.D.
Leila M. Pang, M.D.
Richard K. Raker, M.D.
Peter T. Rothstein, M.D.
J. Gilbert Stone, M.D.
Charles Weissman, M.D.
Jen Tein Wung, M.D.

Assistant Attending Anesthesiologists

Joan F. Benca, M.D.
Mitchell F. Berman, M.D.
Dorothy A. Black, M.D.
Anthony R. Brown, M.D.
Kathryn Ann Cozine, M.D.
Saundra E. Curry, M.D.
Jeffrey N. Dornbusch, M.D.
Timothy J. Dowd, M.D.
Alber N. Falas, M.D.
Ingrid A. Fitz-James, M.D.
Douglas Jackson, M.D.
Desmond A. Jordan, M.D.
Matthew T. Levine, M.D.
Michael Luvin, M.D.
Laurence P. Mark, M.D.
Donald M. Mathews, M.D.
Samantha Mullis, M.D.
Peter L. Salgo, M.D.
William S. Schechter, M.D.
Arthur E. Schwartz, M.D.
Steven M. Shulman, M.D.
Wendy B. Silverstein, M.D.
Arthur J. Smerling, M.D.
Richard M. Smiley, M.D.
Lena S. Sun, M.D.
Gerald S. Weinberger, M.D.
William L. Young, M.D.

Full Professional Physicist

Alvin Wald, Ph.D.

Assistant Professional Psychologist

Robert H. Dworkin, Ph.D.

DENTISTRY

Acting Director of Service

Steven M. Roser, M.D., D.M.D.

Attending Dentists

Jacob Abelson, D.D.S.
Harold Baumash, D.D.S.
Stanislaw H. Brzustowicz, D.D.S.
Edward A. Cain, D.D.S.
Allan J. Formicola, D.D.S.
Robert Gottsegen, D.D.S.
Alvin J. Grayson, D.D.S.
Sidney L. Horowitz, D.D.S.
Norman Kahn, D.D.S.

George C. Kiriakopoulos, D.D.S.
Austin H. Kutscher, D.D.S.
Eugene P. LaSota, D.D.S.
John K. Lind, D.D.S.
John J. Lucca, D.D.S.
Louis Mandel, D.D.S.
Michael Z. Marder, D.D.S.
Louis I. Rubins, D.D.S.
Murray Schwartz, D.D.S.
James W. Schweiger, D.D.S.
Steven S. Scrivani, D.D.S.
Julius Tarshis, D.D.S.
Kenneth C. Troutman, D.D.S.
Ennio L. Uccellani, D.D.S.

Associate Attending Dentists

Thomas J. Cangialosi, D.D.S.
Kourken A. Daglian, D.D.S.
Martin J. Davis, D.D.S.
Stella S. Efstratiadis, D.D.S.
Daniel Fine, D.D.S.
Gunnar Hasselgren, D.D.S.
Heidi Hills, D.D.S.
Paul R. Kamen, D.D.S.
David Kaplan, D.D.S.
Frances Karlan, D.D.S.
Syngcuk Kim, D.D.S.
Ira B. Lamster, D.D.S.
Richard M. Lichtenthal, D.D.S.
Guy D. Metcalf, D.D.S.
Dennis N. Morea, D.D.S.
Herbert Ostreicher, D.D.S.
John D. Piro, D.D.S.
Bernard M. Riklin, D.D.S.
John M. Scarola, D.D.S.
Daniel D. Schube, D.D.S.
Boaz M. Shattan, D.D.S.
Morton J. Stern, D.D.S.
Roy H. Stevens, D.D.S.
Paul Tannenbaum, D.D.S.
Victor P. Terranova, D.D.S.
Nicholas Vero, D.D.S.
Jerome A. Zane, D.D.S.
David J. Zegarelli, D.D.S.
Albert N. Zengo, D.D.S.

Assistant Attending Dentists

Daniel A. Albert, D.D.S.
Jerome Bartwink, D.D.S.
Lucius W. Battle, D.D.S.
Mitchell L. Beck, D.D.S.
Jed M. Best, D.D.S.
Martin H. Blitzler, D.D.S.
Victor L. Bruzzi, D.D.S.
Dory Calev, D.D.S.
Donald F. Cohen, D.D.S.
Susan J. Crawford-Lemell, D.D.S.
Daniel H. Farr, D.D.S.
Armando R. Fernandez, D.D.S.
James B. Fine, D.D.S.
David L. Fleitas, D.D.S.
Stephen Gelfman, D.D.S.
Madeline S. Ginzburg, D.D.S.
Norman Gold, D.D.S.
Michael Goldberg, D.D.S.
Steven J. Goldberg, D.D.S.
Alex M. Greenberg, D.D.S.
Ann Marie Guerra-Paoli, D.D.S.
Joseph A. Harnett, D.D.S.
Ian Y. Hu, D.D.S.
Howard A. Israel, D.D.S.
Lois Jackson, D.D.S.
Margot Jaffe, D.D.S.
Merry Johns, D.D.S.
Renee W. Joskow, D.D.S.
Martin A. Kaminker, D.D.S.

Susan Karabin, D.D.S.
Irving Kittay, D.D.S.
Shari B. Klein, D.D.S.
Arthur D. Krinsky, D.D.S.
Laureen Langer, D.D.S.
Steven M. Lepowsky, D.D.S.
Wayne W. Maibaum, D.D.S.
Michael B. Marouni, D.D.S.
Stephen E. Marshall, D.D.S.
Joseph M. McManus, D.D.S.
Marc W. Michalowicz, D.D.S.
Mohsen Momtahan, D.D.S.
Celia-Ann Musson-Nzabalin, D.D.S.
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Salvatore Napoli, D.D.S.
Matthew Neary, D.D.S.
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Mark A. Tepper, D.D.S.
Fred P. Tripodi, D.D.S.
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Robert G. Veligdan, D.D.S.
Peter Wang, D.D.S.
Bertram J. Weissman, D.D.S.
Robert F. Wright Jr., D.D.S.
Laureen A. Zubiaurre, D.D.S.

Assistant Dentists

Melvin Adler, D.D.S.
David J. Caponigro, D.D.S.
Dino M. DeFilippis, D.D.S.
Luciano A. Ghisalberti, D.D.S.
Dean T. Glasser, D.D.S.
Robert S. Klotz, D.D.S.
Jeffrey I. Stein, D.D.S.
Barry Wolinsky, D.D.S.
Daniel L. Zedecker, D.D.S.
Andrew Zeidman, D.D.S.

DERMATOLOGY

Acting Director of Service

Robert R. Walther, M.D.

Attending Dermatologists

Irving Abrahams, M.D.
Jack Eisert, M.D.
Marc E. Grossman, M.D.
Leonard C. Harber, M.D.
Saul L. Sanders, M.D.
Richard K. Scher, M.D.
Richard A. Walzer, M.D.
Alexander W. Young, M.D.

Associate

Attending Dermatologist

Luis S. Suarez, M.D.

Assistant

Attending Dermatologists

Alan D. Andrews, M.D.
Robert B. Armstrong, M.D.
William G. Atwood, M.D.
Vincent S. Beltrani, M.D.
Vincent A. DeLeo, M.D.
Leon K. Demar, M.D.
Yehuda D. Eliezri, M.D.
Robert P. Feinstein, M.D.
David Goldminz, M.D.
Anthony N. Gregory, M.D.
Eric W. Herman, M.D.
Howard Horlick, M.D.
Cheryl S. Hutt, M.D.
Einar A. Juhlin, M.D.
Bruce Katz, M.D.
Jeffrey S. Kezis, M.D.

Elizabeth H. Knobler, M.D.
Theodore A. Labow, M.D.
Peter C. Lombardo, M.D.
Janet H. Prystowsky, M.D.
Asher D. Rabinowitz, M.D.
Jack H. Rozen, M.D.
Paul I. Schneiderman, M.D.
David Sibulkin, M.D.
David N. Silvers, M.D.
Eugene W. Sweeney, M.D.
Gregory L. Zalar, M.D.

Associate Dermatologists

Rhonda K. Berkowitz, M.D.
Robert M. Bernstein, M.D.
Timothy J. Corey, M.D.
William J. Cunningham, M.D.
Charles Halasz, M.D.
Stanley J. Lewis, M.D.
Joseph A. Penner, M.D.
Margaret S. Ravits, M.D.
Daniel M. Rosenthal, M.D.
Jo-Ann Szyllit, M.D.
Arnold C. Toback, M.D.
Ruth K. Treiber, M.D.
Harvey I. Weinberg, M.D.
Deborah A. Wiener-Rabner, M.D.

Assistant Dermatologists

Laila Almeida, M.D.
Johanna Baeuerle, M.D.
David E. Bank, M.D.
Vincent P. Beltrani, M.D.
Alice C. Cardullo, M.D.
Annette A. Cohen, M.D.
Danielle E. Engler, M.D.
Martha J. Maso, M.D.
Sheryl R. Miller, M.D.
Amy E. Newburger, M.D.
Kass Sardi, M.D.
Jeffrey A. Sklar, M.D.
Steven Wolinsky, M.D.
Michael J. Yunakov, M.D.

MEDICINE

Acting Director of Service

John Lindenbaum, M.D.

Attending Physicians

Qais Al-Awqati, M.D.
Richard P. Ames, M.D.
Gerald B. Appel, M.D.
Arthur Bank, M.D.
Hylan A. Bickerman, M.D.
J. Thomas Bigger Jr., M.D.
John P. Bilezikian, M.D.
Ralph S. Blume, M.D.
Vincent P. Butler, M.D.
Peter R. Caldwell, M.D.
Robert E. Canfield, M.D.
Paul J. Cannon, M.D.
Leonard Chess, M.D.
Stanley Cortell, M.D.
John R. Edsall, M.D.
Yale Enson, M.D.
Michael Field, M.D.
Andrew G. Frantz, M.D.
Elsa-Grace V. Giardina, M.D.
Jonas M. Goldstone, M.D.
DeWitt S. Goodman, M.D.
Peter R. Holt, M.D.
Donald A. Holub, M.D.
Israeli A. Jaffe, M.D.
Abbie I. Knowlton, M.D.
Robert Lindsay, M.D.
John N. Loeb, M.D.
William P. Lovejoy, M.D.
David J. McConnell, M.D.

Jay I. Meltzer, M.D.
 Thomas Q. Morris, M.D.
 Jane H. Morse, M.D.
 Harold C. Neu, M.D.
 Robert H. Palmer, M.D.
 Gerald B. Phillips, M.D.
 Richard N. Pierson Jr., M.D.
 F. Xavier Pi-Sunyer, M.D.
 James A. Reiffel, M.D.
 Allan Schwartz, M.D.
 Kenneth Sterling, M.D.
 Richard J. Stock, M.D.
 Joseph G. Sweeting, M.D.
 Alan R. Tall, M.D.
 Donald F. Tapley, M.D.
 Robert N. Taub, M.D.
 Gerald E. Thomson, M.D.
 Gerard M. Turino, M.D.
 I. Bernard Weinstein, M.D.
 Robert T. Whitlock, M.D.
 John A. Wood, M.D.

Associate Attending Physicians

Leslie P. Baer, M.D.
 C. Redington Barrett Jr., M.D.
 David K. Blood, M.D.
 Conrad B. Blum, M.D.
 Paul W. Brandt-Rauf, M.D.
 John O. Burris, M.D.
 Herbert S. Chase Jr., M.D.
 Michael H. Cohen, M.D.
 Randolph P. Cole, M.D.
 James Coromilas, M.D.
 Jay F. Dobkin, M.D.
 Ronald E. Drusin, M.D.
 Dorothy Estes, M.D.
 Oliver T. Fein, M.D.
 Kenneth C. Fine, M.D.
 Thomas J. Garrett, M.D.
 Glenda J. Garvey, M.D.
 Henry N. Ginsberg, M.D.
 Ira J. Goldberg, M.D.
 Peter Green, M.D.
 Lionel Grossbard, M.D.
 Robert H. Heissenbuttel, M.D.
 Wylie Hembree, M.D.
 George A. Hyman, M.D.
 Faramarz Ismail-Beigi, M.D.
 Thomas P. Jacobs, M.D.
 Kung-Ming Jan, M.D.
 Lynne L. Johnson, M.D.
 Robert L. Jones, M.D.
 Rafael A. Lantigua, M.D.
 Oscar Lebowohl, M.D.
 Robert Lewy, M.D.
 Frank D. Livelli Jr., M.D.
 George H. McCormack, M.D.
 Arthur M. Magun, M.D.
 Aaron Manson, M.D.
 Clayton L. Natta, M.D.
 Hans W. Neuberg, M.D.
 Juan Oliver, M.D.
 Carmen Ortiz-Neu, M.D.
 Martin W. Oster, M.D.
 Constance M. Park, M.D.
 Kenneth M. Prager, M.D.
 Stephen N. Rosenberg, M.D.
 Lawrence L. Scharer, M.D.
 Harvey A. Schneier, M.D.
 Brian E. Scully, M.D.
 Ethel S. Siris, M.D.
 Eve E. Slater, M.D.
 Jeffrey A. Stein, M.D.
 Joseph Tenenbaum, M.D.
 Byron M. Thomashow, M.D.
 Cornelius J. Tyson, M.D.
 Sharon Wardlaw, M.D.
 Herbert Weber, M.D.
 Charles Weissman, M.D.

Francis M. Weld, M.D.
 Earl A. Wheaton, M.D.
 Gail S. Williams, M.D.

Assistant Attending Physicians

Brenda Aiken, M.D.
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*Prepared by the Office of
Professional Communications,
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the Public Interest Department,
The Presbyterian Hospital,
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*Printing:
RASCO Graphics, Inc., New York*

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